

**Taxonomy and Morphology of *Cactoblastis cactorum* and other *Opuntia*-feeding
Lepidoptera in the United States**

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Of the Lepidoptera native to North America that are known to feed on cladodes of *Opuntia*, only species of the genus *Melitara* (Pyrilidae) have adults and larvae that are similar in size to *Cactoblastis cactorum*. *Melitara* includes seven species, five of which have been reared from *Opuntia*. Known larvae of *Melitara* are blue, gray, or brown, in contrast to the red and black larvae of *Cactoblastis*. A scanning electron microscope was used to compare sensory structures of larval antennae and mouthparts in *Cactoblastis* and *Melitara*. *Melitara* has two sensillae with an unknown function on the antenna and a unique form of a trichoid mechanoreceptor on the maxillary galea, and these are absent in *Cactoblastis*. Sensilla on other mouthparts are similar in the two genera. Both *Cactoblastis* and *Melitara* have an invaginated structure on the ventral surface of the head, tentatively termed the basistipal fimbria, that has never been reported for other Lepidoptera larvae. Adults of selected moth species that have been captured in pheromone traps for *Cactoblastis* are illustrated and differentiated. *Melitara* species and *Spodoptera exigua* are the most similar in size to *Cactoblastis*. *Melitara* is distinguished by a bipectinate antenna, in contrast to the simple antenna in *Cactoblastis*. *Spodoptera exigua* is distinctive in having a small orange spot near the middle of the wing, and it lacks the preterminal line present in *Cactoblastis*.